

## 2018 SUNRISE APPLICATION CLINICAL NURSE SPECIALIST

### APPLICATION FOR ENLARGED SCOPE OF PRACTICE

**Pursuant to Arizona Revised Statutes section 32-3104 this Sunrise Application for enlarged scope of practice for Clinical Nurse Specialist (CNS), one of four roles of Advanced Practice Registered Nurses and is submitted by the Arizona Nurses Association. Contained in this application is information for the professional role of a CNS addressing the factors set forth in Arizona Revised Statutes section 32-3106.**

#### Nature of Scope Enlargement Request

This application seeks the amendment of Title 32, Chapter 15 (Nursing) to reflect a scope of practice for Clinical Nurse Specialists (CNS) consistent with their education and training by providing Certified Nurse Specialists the ability to obtain certification for prescribing authority. Such authority will be limited to prescribing only for CNS who has the required education and is restricted to those CNS who prescribe in their employment in licensed health care institutions and consistent with statute and rules adopted by the Board of Nursing.

#### Advanced Practice Registered Nursing

The term APRN (Advanced Practice Registered Nurse) refers to a nurse who has, through graduate level education, acquired advanced clinical knowledge and skills to provide direct patient care. Professional roles fall into four categories: Nurse Practitioners (NP), Certified Nurse-midwives (CNM), Certified Registered Nurse Anesthetists (CRNA) and Clinical Nurse Specialists (CNS). In addition to the didactic and clinical education APRNs receive in obtaining a Bachelor's degree and qualifying for a license as a professional registered nurse, APRN graduate programs provide training in advance health assessment, physiology and pharmacology as well as other training which prepares them for the specialized practice of their role.

Arizona statutes have, for more than half a century, recognized extended practice for nurses. Administration of anesthesia by nurses with physician oversight was authorized by legislation in 1923. The Board of Nursing was provided authority in 1974 to extend nursing practice in specialty areas, provide for the dispensing of drugs in certain circumstances and recognize by rule, nurse practitioners and nurse midwives. Statutes in 1982 defined "nurse practitioner" and provided that the Board of Nursing could (in collaboration with MD and DO Boards) establish education and training for the performance of "additional acts" including prescribing and dispensing.

Subsequent legislation has further clarified the role of the Board of Nursing in determining the qualifications and acts of Advanced Practice Nurses, provided a

definition of “clinical nurse specialist” and defined and qualified the scope of CRNAs.

## **THE COST TO THE STATE OF IMPLEMENTING INCREASED SCOPE OF PRACTICE FOR APRNs**

The Arizona State Board of Nursing currently regulates all categories of Advanced Practice Registered Nurses.

The relevant licensing, renewal and certification fees established pursuant to A.R.S. Section 32-1643 are established by the Board. The Board does not foresee changing its current fee structures and amounts. The Board foresees no additional cost beyond the current fee structure for regulation related to the proposed increase in scope.

### **I. Introduction to Clinical Nurse Specialist (CNS)**

The CNS is one of four recognized Advanced Practice Registered Nurse (APRN) roles in the United States: the CNS, the Nurse Practitioner (NP), the Certified Nurse Midwife (CNM), and the Certified Nurse Anesthetist (CRNA). The CNS, either independently or as part of a multidisciplinary team, can diagnose and treat acute or chronic illness in a specified population, identifying the need for specialist care for individuals with or at risk for chronic conditions. Clinical Nurse Specialists function in their role as leaders and facilitators of change, coordinators of specialized care, and implementers of evidence-based care within/between organizations to facilitate quality improvement, patient safety, and lower healthcare costs. The recommended proposal for expansion of scope and prescriptive authority would allow a CNS to do the following: a) Prescribe pharmacological interventions, non-pharmacological interventions (e.g. physical therapy, respiratory therapy), and medical supplies (e.g. ostomy supplies for a patient with a colostomy, diabetic supplies such as glucometers and testing strips); b) Order, perform, and/or interpret diagnostic tests including lab work and x-rays. The CNS must be a registered nurse and must have specialized graduate education with a minimum of a master’s degree in nursing or doctorate of nursing practice (DNP).

There are differences between the CNS and the NP. Both the CNSs and NPs are responsible and accountable for health promotion; prevention of illness and risk behaviors; diagnosis and treatment of health/illness states, and disease management for individuals and families. But additional aspects of CNS professional practice more specifically associated with their role include: 1) specializing in a population; 2) specializing in the care of particular groups and communities; and 3) providing acute and chronic care through the spectrum of wellness to illness (National Association of Clinical Nurse Specialists (NACNS), 2004). These aspects include, but are not limited to, health maintenance and prevention, management of patients with chronic conditions and care transition

needs, management of patients with physiologically unstable conditions, rehabilitation, palliative, and end-of-life care which are Core CNS Competencies (National CNS Competency Task Force, 2010).

Generally their practice is specialized in a clinical area in hospital and facilities that may be identified in terms of:

- a. Population (e.g. pediatrics, geriatrics, women's health)
- b. Setting (e.g. critical care, emergency room)
- c. Disease or Medical Subspecialty (e.g. diabetes, oncology)
- d. Type of Care (e.g. psychiatric, rehabilitation)
- e. Type of Problem (e.g. pain, wounds, stress)

Need to get from Kathy the DHS information that describes locations of practice.

In Arizona, there are 174 CNSs who are APRNs (October, 2018 Arizona State Board of Nursing). They are registered nurses (RN) who, in addition to their RN licensure and training, have completed an accredited graduate level educational program, have passed a national certification exam that matches the specialty area educational preparation, and obtained a certificate to practice as an APRN in the state of Arizona.

Here are four descriptions and actual examples of Clinical Nurse Specialists practicing in the state of Arizona:

### **1.1.1 Psychiatric CNS: Description of Role**

In private practice and as part of health care teams, psychiatric CNSs have implemented interventions that increased recognition of depression and provided effective behavioral health care to reduce depression. CNSs provide behavioral health care to individuals in private practice and to communities through special programs. The Insight Program, which was implemented by CNSs in a community setting to address depression in women, had a statistically significant and clinically relevant improvement in scores on all tools used (Adams, 2000). Another study demonstrated that CNSs who worked as members of the primary care team in providing care in a Veterans Administration hospital, improved the recognition of depression and its initial management (Dobscha, Gerrity, & Ward, 2001).

#### **EXAMPLE: Psychiatric/Mental Health CNS**

The Psychiatric/Mental Health CNS has a role at many points along the continuum of care of the Behavioral Health patient. As a consultant at a facility in Arizona, the CNS does the initial comprehensive psychiatric evaluations of patients, performs consultation assessment, refers management of the patient to other specialties if indicated, and receives referrals for psychotherapy. However both in the inpatient setting as well as the outpatient setting, the CNS must rely on other providers to follow through with medication management, additional testing and interpretation to be done in order to complete the comprehensive care management of patients requiring psychiatric care, treatment, and monitoring.

Providing the CNS in this situation the ability to prescribe medications and order

appropriate lab and diagnostic tests ensures that the patient gets appropriate, comprehensive care. Without the ability to provide these additional services, this vulnerable patient population is at further risk for non-compliance. If referral for medication or lab services is not available at the time of assessment, it is necessary for the patient to locate an additional provider of these services, schedule an additional appointment and incur an additional charge, either for the patient or the insurance company. Due to the chronic nature of mental health impairment, the result of the lack of immediate appropriate services available may lead this population to non-compliance and a resulting need for higher, more costly levels of service. The inclusion of prescribing in the role of the Psychiatric/Mental Health CNS builds a trusting and highly valued nurse-patient relationship. Patients report nurses are easier to talk to about their medications which allows the CNS to provide more holistic care than what is currently being practiced in the state of Arizona (Ross, 2015).

### **1.1.2 Women's Health CNS: Description of Role**

The CNS has demonstrated improved outcomes when providing home care to mothers at high risk of delivering low-birth weight infants and has allowed earlier discharge of very low birth weight infants through provision of follow-up care. Brooten, Youngblut, Brown, Finkler, Neff, & Madigan showed in a randomized, controlled clinical trial that the group receiving prenatal home care by a CNS saved 750 hospital days, yielding 2.9 million dollars saved (Brooten et al., 2001). The CNS has also been shown to be an effective member of the prenatal care team resulting in the greatest client satisfaction and the lowest cost per visit when providing prenatal care (Gravely & Littlefield, 1992).

#### **EXAMPLE:**

As a Women and Infants CNS practicing in Arizona, the role requires working to ensure that women: (1) have adequate knowledge and skills of healthcare needed for themselves and their infants; (2) have adequate control of their conditions; (3) have received proper education and discharge instructions; and, (4) have a plan when they are home to problem-solve their potential complications as well as maintaining and sustaining life to their new infant. The types of patients this CNS works with are women who have gestational or pre-gestational diabetes, chronic hypertension, preterm labor, or other high-risk preterm labor conditions to ensure they have a positive and safe birthing experience. Bridging women home after delivery, regardless of a positive outcome or negative outcome, is complex and resource consuming. An increase in scope and prescriptive authority would afford the opportunity to ensure these patients are referred to the appropriate community resources for themselves as well as their infants. Prescriptive authority would allow the ability for breast-feeding moms to have the necessary equipment and potential medications and supplements essential for a successful experience. Often the CNS is the only consistent health care professional who communicates with all those caring for the patient and infant, because physicians rotate call and services. With the increase in scope and prescriptive authority, this Women and Infants CNS would be able to close the potential gaps in care and keep all parties informed by

working with the multidisciplinary team as well as keeping the electronic medical record up-to-date.

### **1.1.3 Medical/Surgical Chronic Disease Management CNS: Description of Role**

CNSs, as part of a disciplinary team, have distinguished themselves as effective coaches for those with chronic illness (e.g. diabetes, cardiac conditions, and cancer) through promotion of self-care, resulting in decreased costs and decreased readmissions. Several studies document their efforts in the care of the chronically ill, including those with heart failure (Creason, 2001; Knox & Mischke, 1999; Blue, 2001; Ryan, 2009); asthma (Horner, 2008); and epilepsy (McNelis, Buelow, Myers, & Johnson, 2007). In addition, CNSs have developed and demonstrated the effectiveness of their community programs through early identification of those with COPD which slowed down the progression of their disease (DeJong & Veltman, 2004).

#### **EXAMPLE: Medical Chronic Disease Management by an Acute Care CNS for Diabetes Management**

In this situation the facility does not employ Diabetes Education Specialists, but relies on bedside nursing to educate and advocate for patients with diabetes. This is a trend within several hospital systems as a way to reduce cost and redirect spending on other services. This change has reduced the availability of diabetes expert nurses within the hospital setting. This change can also potentiate delays in proper care and management of diabetes, as staff RNs are not experts in proper disease management and troubleshooting. The Acute Care Clinical Nurse Specialist (CNS) in this facility routinely sees the diabetes patients, educating on important care concepts and working with the multidisciplinary team (Physicians, Residents, Physical Therapy, Dietitians, Social Work, and Case Management) to ensure patients with complex situations have met the requirements to be discharged from the hospital safely, with their diabetes under control, and reduce readmission rates. While this partnership with the multidisciplinary team has provided great outcomes for patients and this facility, there are some challenges. Permitting the CNS to practice to the fullest extent of education and training by allowing for prescriptive authority and an increased scope of practice would alleviate existing challenges and delays in care. Often times, physician colleagues are very busy and rotate on and off service, The Acute Care CNS rounds on these patients together with nursing every day during the week with each of the different providers. There are times where physicians may not have time to address the specific needs of the diabetes patients. Furthermore, many do not address the discharge needs of the patients due to time constraints and lack of awareness of community resources. The physician resident program also has challenges in management of these patients, as the physicians are still in training and therefore are not comfortable (at times) addressing clinical situations with this patient population. This particular Acute Care CNS practice would be greatly enhanced by having prescriptive authority, as the CNS would be able to: (1) order pertinent laboratory testing specific to diabetes management; (2) interpret test results and

tailor treatment regimens to ensure their glucose levels are properly managed; therefore reducing complications and reducing overall healthcare costs by keeping patients out of the hospital system. For example, the Acute Care CNS would be able to order specific diabetic equipment that is easier for patients to utilize if they have neuropathy in their hands or if they have difficulty checking blood glucose levels and administering insulin due to neuropathy (neuropathy is a condition that can result in numbness of the hands and feet).

**EXAMPLE: Chronic Disease Management by an Acute Care CNS for Hematology/Oncology and Bone Marrow Transplant**

The number of Americans with a history of cancer is growing due to the aging and growth of the population, as well as improving survival rates. Nearly 14.5 million Americans with a history of cancer were alive on January 1, 2014, not including carcinoma in situ (non-invasive cancer) of any site except urinary bladder, and not including basal cell and squamous cell skin cancers. It is estimated that by January 1, 2024, the population of cancer survivors will increase to almost 19 million: 9.3 million males and 9.6 million females (American Cancer Society, 2014).

As a part of the team in the acute care setting, the CNS for Hematology/Oncology and Bone Marrow Transplant in this facility in Arizona works collaboratively with physicians, pharmacists, nurses and multiple support team members such as occupational therapy, speech therapy, physical therapy, pain management, nutritional support, psychology. Patients are seen by the CNS upon their initial diagnosis, across the continuum of care, which includes treatment, through palliative care and hospice. Cancer is now a chronic disease that does require multiple resources to ensure quality of life and prevention of complications and readmission. In the hospital this CNS rounds with each hematologist and oncologist when they see the patients. This necessitates being at the hospital 5 days a week, 8-10 hours a day, interacting with patients and care teams to manage complications and questions that arise. The CNS is also available to the team 24 hours a day on call.

A common example is the following situation. A patient develops a headache as a side effect of an anti-nausea medication that was prescribed because it was listed on the approved formulary of the hospital's medications that can be used. In order to change to another anti-nausea in the same class of medications, a prescribing provider has to be contacted, the recommendations for a substitute medication by the CNS discussed, ordered and entered into the electronic medical record.

Another situation that has occurred is when standard medications or follow up testing and monitoring are not ordered as outlined by treatment protocols according to established national evidence-based standards, the CNS must track down and call a prescribing authority to have these ordered.

Cancer is a life-changing event, not a life-ending event. A portion of this CNS's time is spent at the bedside caring for patients with complex needs. Increasing the CNS scope of practice and adding prescriptive authority in this particular institution would afford the opportunity to order interventions such as psychosocial support. For example, consider the patient with cervical cancer who has had multiple doses of vaginal radiation therapy to treat her cancer and is admitted to

the hospital because of complications. After the physical symptoms have resolved and she is physically ready for discharge, there are still multiple needs often not addressed in order for her to resume her quality of life. For her to be able to engage in a healthy sexual relationship, she will need physical treatment of her strictures (an abnormal narrowing of the vagina due to scar tissue attributed to the side effects of radiation therapy) and hormone therapy. She will need referrals and follow-up care. The CNS with prescriptive authority and expanded practice would be able to address these needs. It was noted from a study out of the University of Chicago that only 20% of patients are asked about sexual dysfunction when they were being treated with for a chronic illness. In this study it was also noted that patients are more comfortable talking about the subject when it is initiated by a nurse (University of Chicago Medicine, 2012).

#### **1.1.4 Acute Care CNS: Description of Role**

CNSs who work in the acute care setting (e.g. hospital) have significantly decreased patients' length of stay. To improve the outcomes of those having a stroke, a CNS led team implemented practice guidelines and developed best practice tools resulting in reduced length of stay for those patients admitted with a diagnosis of stroke (Fuhrman, 2011). For geriatric patients having a hip fracture, a CNS led the team to achieve The Joint Commission certification in Geriatric Hip Fracture Disease that led to decreased costs by 15%, a 28% decrease in length of stay and 0.5% decrease in mortality (McWilliam-Ross, 2011).

#### **EXAMPLE: Inpatient Acute Care Pain Management CNS**

In a hospital in Arizona, the inpatient, acute care Pain Management CNS consults with patients who have difficult acute and/or chronic pain management issues that exceed the bedside nurse's and hospitalist's ability to manage. There are no pain management physicians at this facility; the management of pain is left to generalist practitioners (nursing, nurse practitioners and physicians). The Pain Management CNS spends in-depth time at the bedside with patients, reviewing medical records, working with patients' pain management physicians (outpatient) and/ or primary care physicians in the community, understanding the physiology (causes/origins) of the patients' pain experience, and developing a plan of care. This CNS spends an average of 1-3 hours per initial consult and sees about 10-15 new patients each week. After assessing the patient, the CNS makes recommendations for pain management based on the individual patient. There are consistent delays in care as the CNS must have a provider with prescriptive authority order the recommendations and any additional testing that may be necessary to ensure there are not any additional underlying problems, as pain management encompasses more than just ordering and discontinuing pain medication. The Pain Management CNS then monitors the interventions, notifies the provider when testing results are complete, interprets the information to the provider, and again makes recommendations that have to be ordered by another provider. The CNS role continues with the patient throughout the patient's hospital stay. The CNS rounds daily and makes recommendations to decrease, increase, or transition to long-acting oral medications in preparing the patient for either discharge or transition to

a different level of care such as rehabilitation or a skilled nursing facility. Each one of the recommendations made has to be ordered by a provider with prescriptive authority. Setting patients up for success with discharge is another part of the Pain Management CNS role. Currently the CNS makes recommendations for non-pharmacological interventions such as acupuncture, or physical therapy, but has to ensure that a prescribing provider reviews the notes and orders the intervention. This often delays the discharge or is missed by those providers. For chronic pain management the Pain Management CNS is also involved in working with social workers and case management to ensure patients have psychosocial support and resources such as follow up with psychiatry or psychology. Again with a limited scope the CNS can only make recommendations but must rely on providers to order and follow up on the orders that are made. Providing holistic patient care becomes fragmented and disjointed when having to rely on generalist providers to order recommendations that come from a Pain Management CNS who is educated and trained as a specialist. The increased scope and prescriptive authority would afford this CNS the ability to order ongoing titration (adjustment) of pain medication, treatments, and therapies to assist with pain reduction if allowed to practice to the full extent of the education and training. This Acute Care CNS can impact patient satisfaction and the patient length of stay, which directly impacts the cost of healthcare.

### **1.2 What is the Current Scope of Practice?**

CNSs deliver care in acute and chronic settings to a wide range of patient populations. CNSs can be seen in hospital facilities, doing research, working with physicians and other providers in private practice, providing care at community based organizations, expanding their role as a school health provider, and working in nurse managed clinics (Rose, All, & Gresham, 2003). The CNS provides care to individual clients and populations, facilitates attainment of health goals, and provides innovation in nursing practice based on clinical expertise, evidence-based decision making, and leadership. The CNS influences best practice with nurses, multidisciplinary team members, and organizations to impact system wide changes to improve programs of care.

The CNS regularly consults with physicians both within their specialty and those in other specialties, as relevant to the care of each patient. The CNS has the ability and training to medically diagnose and manage the patient, to work as an expert nurse within systems to monitor and improve the quality of care, to provide training to practicing nurses, other providers, as well as students, and to collaborate with and/or lead the multidisciplinary team in team efforts such as program development (Gordon, Lorilla, & Lehman, 2012).

In addition to the functions of a registered nurse (RN), a CNS, under A.R.S. 32-1601(6), may perform a number of additional functions for an individual, family, or group within the population focus of certification and for which competency has been maintained (Arizona State Legislature, n.d.-c). These functions include, but



are not limited to, evaluation of the patient's complex health needs and directing the patient to appropriate healthcare providers and/or resources.

### **1.3 History of CNS**

The concept of the CNS began to evolve in 1943 when Frances Reiter first coined the term "nurse clinician," described as a master's-prepared nurse who remained at the bedside. Acceptance of the CNS role grew during the 1960s with the establishment of Medicare and Medicaid, technological advances such as cardiac-thoracic surgery and coronary care, and the development of the clinical specialist role in psychiatric nursing. In 1974, the American Nurses Association officially accepted the CNS as an expert practitioner. The expanded roles of educator, expert clinician, change agent, manager, and advocate occurred in the early 1980s. However, in 1995 the National Association of Clinical Nurse Specialists (NACNS) was established, and CNSs were subsequently identified for Medicare reimbursement eligibility in 1997 (Hamric et al., 2009). Organizational development of CNSs and legal inclusion of the CNS in reimbursement during the 1990s were vital to the continuation of the CNS role. The CNS has regained support in recent years because of the noted contribution of the CNS to health care systems. The CNS plays a pivotal role in quality improvement, patient safety, and improved health outcomes.

The CNS is required to hold a Registered Nursing (RN) license in good standing with the Arizona State Board of Nursing, hold a Master's degree in Nursing from an accredited university, and hold a certification in a specialty.

### **1.4 Where do CNS Groups Currently Practice (setting and geography)**

CNSs are expert clinicians in a specialized area of nursing practice ranging from particular patient populations to disease type to rehabilitation to type of problem. CNSs also practice in a wide variety of healthcare settings which include, but are not limited to, clinics, hospitals, and outpatient facilities such as community health centers and behavioral health and integrated care agencies. In addition to providing direct patient care, CNSs influence care outcomes by providing expert consultation for nursing staffs and by implementing improvements in health care delivery systems (National Association of Clinical Nurse Specialists, 2015a).

According to a 2014 NACNS survey, over 70% of CNSs work with adult patients from the age of 19-85 years of age. Common clinical care specialties noted were gerontology, oncology, cardiovascular, diabetic, and psychiatric mental health (National Association of Clinical Nurse Specialists, 2015b).

CNSs provide advanced nursing care in hospitals and other clinical sites; provide acute and chronic care management; develop quality improvement programs; and serve as mentors, educators, researchers and consultants (Brassard & Smolenski, 2011).

### **1.5 How many are there in the state?**

Today, approximately 70,000 CNSs practice in all 50 states and the District of Columbia; of these, 182 CNSs are certified to practice in Arizona.

The following represent an example of the various types of CNSs in the metropolitan areas in Arizona:

Dignity Health Arizona (St. Joseph's Hospital):

Neurosciences: 3 CNSs

Medical/Trauma ICU: 1 CNS

Cardiac/Thoracic and Cardiac Stepdown: 1 CNS

Honor Healthcare

Hematology and Bone Marrow Transplant: 1 CNS

Psychiatric Mental Health: 1 CNS

Increasing CNS roles at all five hospitals throughout 2015 - 2016

Banner Health

Banner Home Care: 1 CNS

Baywood: 1 CNS

Cardons Childrens: 1 CNS

Desert: 4 CNS

Estrella: 1 CNS

Gateway: 2 CNS

Good Samaritan: 7 CNS

Thunderbird: 2 CNS

Banner University Medicine Center Tucson:

Surgery Oncology: 1 CNS

Women & Children's: 1 CNS

Emergency Services: 1 CNS

Cardiology: 1 CNS

2 Clinical Specialists in school at GCU for CNS track (Good Samaritan and Gateway)

Mayo Clinic Hospital in Phoenix, Arizona

Bone Marrow Transplant: 1 CNS

Oncology: 1 CNS

Progressive Care/Cardiovascular: 1 CNS

1 Clinical Specialist in school at Purdue University for CNS track

Arizona Partnership for Immunization

Public Health: 1 CNS

In 2010, there were 122 CNSs statewide, an 18.4 percent increase from 2007. In 2013 the CNS faction peaked at 286. Since then, 86 have either become nurse practitioners no longer practicing as a CNS or relocated to a state that allows them to practice to the full extent of their education and training (Arizona State Board of Nursing, 2015).

## **II. Definition of Problem**

Increased Advanced Practice Nursing autonomy is necessary to fill the gaps in healthcare, as identified in Healthy People 2020 (U.S. Department of Health and Human Services, 2010) and applied to Arizona. CNS practice areas tend to align with underserved groups or action items in the report—maternal /child and neonatal health, chronic disease management, reducing infection rates, and mental health (Arizona Health Matters, n.d.). Advanced practice nurses provide this service at a lower cost than an all-physician workforce would allow. Public health is better served by removing the barriers to full CNS practice.

A significant deficit in the state of Arizona is the Psychiatric Mental Health CNS. These providers are limited in their scope of practice and the role is not attracting psychiatric CNSs to the state of Arizona because the CNS in Arizona does not have prescriptive authority. This limits access to care of those with need.

If CNSs are permitted to practice to the extent of their education, training, and abilities, Arizona could benefit from enhanced competition, including potentially lower costs and greater patient access to care. The need for this expanded practice is reflected in healthcare demographics. The combination of increased longevity and changing birth rates has caused our population's age-structure to shift, increasing the proportion of older adults facing the costs of chronic diseases, while simultaneously decreasing the number of younger working adults who contribute to Social Security and welfare systems through wage deductions. As the Baby Boomer generation is reaching older adulthood, the impact of these population dynamics is upon us. In 2010, about 14 percent of Arizonans were 65 years of age or older, with about 83 percent of these residents being White non-Hispanic. The entire population of Arizona is projected to increase by more than 80 percent from the 6,401,568 residents estimated to have lived in Arizona on July 1, 2010 to a projected 11,562,584 by 2050 (Arizona Department of Health Services, 2012).

The problems are especially notable in cancer care. As stated previously, nearly 14.5 million children and adults with a history of cancer were alive on January 1, 2014, in the United States. Nearly half (46%) of cancer survivors are 70 years of age or older, while only 5% are younger than 40 years. As mentioned earlier, by January 1, 2024, it is estimated that the population of cancer survivors will increase to almost 19 million: 9.3 million males and 9.6 million females (American Cancer Society, 2014). It is anticipated that the primary care and hematological oncology community are not prepared in volume and education to adequately care for this aggregate with the increase in chronic disease population.

## **III. Educational Programs and Clinical Preparation**

### **3.1 Educational Requirements: ~~Pre-graduate~~**

In Arizona, CNSs are advanced practice registered nurses (APRNs) who have completed an accredited graduate level educational program, have passed a national certification exam that matches the educational preparation, and obtained

a certificate to practice as an APRN in the state of Arizona (Arizona State Board of Nursing, 2014c).

CNS curricula were to include a clinical core of advanced pathophysiology, advanced pharmacology, and advanced health assessment in addition to the other practice competencies of the CNS role.

The CNS receives education at the graduate level in the specific area of a clinical nurse specialty. This education is specific to the diagnosis and treatment of health/illness states, disease management, health promotion, and prevention of illness and risk behaviors among individuals, families, groups, and communities. CNS education includes the study of a specific population and requires all programs to offer content on advanced pharmacology, advanced pathophysiology, and advanced health assessment. CNSs hold a registered nursing license and a document of recognition as a CNS.

In May 2002 legislation was signed into law in Arizona that provided title protection for the role and increased the educational requirements for the CNS to include a Master's Degree in Nursing from a designated CNS track. The current education requirements include 500 clinical hours, advanced pharmacology, advanced pathophysiology, advanced physical assessment and differential diagnosis, and certification in a CNS specialty. If prescriptive authority in the state of Arizona were added to the scope of practice for the CNS, then additional education would be required for CNS whose academic transcript is missing one or more of the current Arizona CNS educational requirements.

### **3.3 CNS Certification**

According to the Arizona State Board of Nursing, professional nurses seeking certification as a CNS shall meet the following requirements(Arizona State Board of Nursing, 2014a):

- a. Current Arizona licensure in good standing or current RN licensure in good standing in another compact party state,
- b. Graduate degree with major in nursing,
- c. Completion of a CNS program in the specialty area pertinent to the practice of a CNS as part of the graduate program or post-Master's program,
- d. Current certification as a CNS by a national nursing credentialing agency in the specialty area of nursing practice.
- e. Each applicant for initial certification is required to submit a full set of fingerprints. All applicants must show evidence of United States citizenship.

Examinations are developed by ANCC in cooperation with a Content Expert Panel (CEP) comprised of carefully chosen experts in the field being tested. The content expert panel analyzes the professional skills and abilities from the role delineations studies, which provide the evidence for the test content. Content-based questions

are then developed by advance practice nurses who have received training by ANCC. These items are reviewed by the content expert panel and the ANCC staff and pilot-tested to ensure validity and psychometric quality before being used as scored items on the actual examinations. The ANCC adheres to a variety of guidelines during the development of items to ensure that the questions are appropriate for the specialty and certification level. Items are referenced to the approved test content outlines and reference books, and items are screened for bias and stereotypes and meet the accreditation standards of the Accreditation Board for Specialty Nursing Certification (ABSNC) and the National Commission for Certifying agencies (NCCA). The examinations are monitored by the ANCC staff for continued validity and reliability and are updated approximately every three years (American Nurses Credentialing Center, 2013).

ANCC certification examinations are specific for each specialty within the CNS role. Specialty areas approved in Arizona for the role of Clinical Nurse Specialist include:

- Adult Psych/Mental Health CNS
- Family Psych/Mental Health CNS
- Gerontological CNS
- Adult Health CNS
- Pediatric CNS (Arizona State Board of Nursing, 2014c)

### **3.4.2**

The second nationally recognized credentialing body, the American Association of Critical-Care Nurses (AACN) Certification Corporation, develops and administers the Clinical Nursing examinations. The AACN Certification Corporation contributes to the safety and health of consumers through comprehensive credentialing of nurses to ensure their practice is consistent with established standards of excellence in caring for acutely and critically ill patients and their families.

AACN Certification Corporation examinations are specific for each specialty within the CNS role. Specialty CNS certifications awarded by the AACN and approved by the AZBN include:

- CCNS—Adult Acute and Critical Care Clinical Nurse Specialist
- ACCNS—Acute Care Clinical Nurse Specialist: Wellness through Acute Care
- Adult—Gerontology
- Pediatric
- Neonatal (Arizona State Board of Nursing, 2014c)

Sixty-one percent (61%) of the questions address content where the age of the patient spans the developmental spectrum. The remaining 39% address adult, pediatric, or neonatal patients. Some questions on the ACCNS exam use information about patient care problems commonly encountered by CNSs caring for acutely and/or critically ill patients. These care problems are reviewed and

revised at least every 5 years in a study of practice, known as a job analysis, completed by AACN Certification Corporations (American Association of Critical-Care Nurses, 2015). An example of a CNS test plan is found in the AACN ACCNS-Adult-Gerontology Exam Handbook (AACN, 2015).

### **3.5 CNS and Prescriptive Authority**

In contemplating the value of providing prescriptive authority and expansion of practice for the CNS, the following should be considered: A) Extending the role of the CNS to include prescribing allows greater autonomy in managing patient needs and improving patient care, enabling CNSs to provide more timely and responsive services for patients. B) Advanced nurse prescribing is expected to have many benefits, including improvement in quality of care for patients, improvement in patients' access to health care, better use of the skills and experience of nurses, increased recognition for their competencies and expertise, an improved working relationship between health care professionals, a reduction in the workload of medical staff, time savings for patients and medical practitioners, and potential cost reductions. C) Expanded practice can improve the management of people with chronic conditions and prevent premature deaths. D) The aims of extending prescribing responsibilities are to: (1) improve the quality of service to patients without compromising safety; (2) make it easier for patients to get the medications they need; (3) increase patient choice in accessing medicines; (4) make better use of the skills of health professionals; and (5) contribute to the introduction of more flexible team work among health intraprofessionals. E) Ethical and statutory mandates will dictate the responsibility of the CNS to keep up to date with current evidence and best practice within their specialty area. F) CNS prescriptive authority should be optional, and include a post-master's certification and any requirements consistent with that of the other APRN roles. G) Because safety has been demonstrated by other APRN roles that have prescriptive authority, prescriptive authority requirements should be consistent. H) Over three decades of nurse prescribing, the literature supporting the quality and safety of nurse prescribers is strong. I) A CNS is authorized to prescribe medications or pharmaceuticals if he/she has met the state requirements for prescriptive authority. Individual states vary in their requirements and prescriptive authority may not be necessary for all CNS roles.

### **3.6 Educational Requirements for CNS Prescriptive Authority**

The current education of the Clinical Nurse Specialist (CNS) includes courses in Advanced Physical/Health Assessment, Advanced Pathophysiology, and Advanced Pharmacology pursuant to *The Essentials of Master's Education for Advanced Practice Nursing* (American Association of Colleges of Nursing, 2006a). This education is identical to that of the Nurse Practitioner, preparing the advanced practice nurse for prescriptive authority privileges. Therefore, the didactic for CNS practice provides training for prescriptive authority and increased scope of practice and follows the requirements as set forth by the American Association of Colleges of Nursing.

Currently, 28 states and surrounding areas (Alaska, Arkansas, Colorado, Connecticut, Delaware, Guam, Hawaii, Idaho, Iowa, Kentucky, Maine, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Northern Mariana Island, Oklahoma, Oregon, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming (NACNS, 2016) allow CNS prescriptive authority. Literature review yields no documented harm to the public through allowing prescriptive authority to the CNS in these states.

### **3.7 Process for Developing and Adopting Rules for CNS Prescriptive Authority**

The proposed prescriptive authority for CNSs in Arizona would be consistent with the process utilized currently for the nurse practitioner and certified nurse midwife but with limitations consistent with the CNS meeting education requirements and restricted to employment in licensed health care institutions as allowed by statute and pursuant to the policies and protocols applicable to CNSs in those institutions. The present rules for prescriptive authority for NPs and CNMs are described by the Arizona State Board of Nursing (under Prescribing and dispensing authority: Prohibited acts; Prescribing drugs and devices: Dispensing drugs and devices) and the Arizona Revised Statutes (Arizona State Board of Nursing, 2014d; Arizona state legislature, 2011).

## **IV. How Consumers Need and Will benefit from Change in Scope**

### **4.1 Studies of patient safety**

Clinical Nurse Specialists (CNSs) have a long record of improving patient safety. They have been at the forefront in healthcare transformation, leading data-driven change in programs, practices, and systems. Coordination of increasingly complex nursing care is essential to reduce errors and improve safety and quality outcomes, which in turn reduce healthcare costs. CNSs have demonstrated positive outcomes in prenatal care; preventive and wellness care; care to reduce depression; chronic conditions; preventing hospital-acquired conditions (HACs); reducing lengths of stays in acute and community care centers; and preventing readmissions (National Association of Clinical Nurse Specialists, 2013).

The Institute of Medicine (IOM) issued 8 key recommendations in the 2010 Future of Nursing Report, including #1—removing practice barriers and allowing advanced practice nurses to practice to the full extent of their education and training (Institute of Medicine, 2010a).

Direct care provided by CNSs is safe, effective, and results in high patient satisfaction. A few of the numerous studies that describe CNS practice are listed below:

- Early findings of a randomized, controlled study of outcomes and cost-effectiveness for arthritis patients attending CNS-led rheumatology clinics, compared to physician-led clinics, showed that functional status, disease symptoms, and patient satisfaction are similar between groups (Ndosi, Vinall, Hale, Bird, & Hill, 2011).

- APRN psychiatric nurses are essential to a transformed mental health service delivery that is patient-centered, evidence-based, and recovery oriented (Hanrahan, Delaney, & Merwin, 2010).
- A comparison of care provided by CNSs and general practitioners at a cancer clinic found that the care by CNSs resulted in similar levels of patients' quality of life. Patients valued the relationship developed with the CNS, had longer and more frequent consultations, and were more often referred to the multidisciplinary team. There were indications that oral and nutrition problems were managed more effectively in the nurse-led clinic, although emotional functioning was higher in the medical group (Wells et al., 2008).
- The Cochrane Database group conducted a meta-analysis including 25 articles relating to 16 studies comparing outcomes of CNSs and other primary care nurses and physicians. Overall, health outcomes and quality of care were equivalent for nurses and physicians. The satisfaction level was higher for nurses (Laurant, Hermens, Braspenning, Akkermans, Sibbald, & Grol, 2006) (Laurant et al., 2008b).

CNSs are leaders of change within organizations as the clinical experts. They can facilitate quality of care in numerous ways: Utilize evidence-based programs to prevent avoidable complications; improve the quality of care; improve safety; prevent hospital readmissions; reduce length of stay; increase patient satisfaction; improve pain management practices; and improve patient outcomes (DeJong & Veltman, 2004; Murray & Goodyear-Bruch, 2007; Naylor et al., 2004; Ryan, 2009; Vollman, 2006). Dejong and Veltman's (2004) study investigated the effectiveness of a CNS-led community based chronic obstructive pulmonary disease screening and intervention program (DeJong & Veltman, 2004). The results indicated that of the subjects contacted after the screening, 47% indicated that they stopped smoking, were in the process of quitting, or were seriously considering quitting. In a study by Murray and Goodyear-Bruch (2007) a ventilator associated pneumonia (VAP) prevention program was developed by CNSs and resulted in a reduction in incidence of VAP in the critical care units of a hospital system, with two units having no cases of VAP over a two year period (Murray & Goodyear-Bruch, 2007).

Vollman (2006) looked at pressure ulcer prevalence among vulnerable intensive care patients. Critically ill patients often experience complications including ventilator-associated pneumonia and pressure ulcers. This CNS team found that a CNS directed program reduced pressure ulcer prevalence among vulnerable intensive care patients from 50-80% (Vollman, 2006). CNSs are the coaches that provide transitional care of patient populations with chronic diseases with a goal of preventing readmissions and improving patient outcomes (Naylor et al., 2004; Ryan, 2009). Naylor et al. (2004) conducted a randomized, controlled trial and found that APRN directed discharge planning and a home follow-up protocol resulted in: Fewer readmissions, lower mean total costs, and short-term improvements in quality of life and patient satisfaction (Naylor et al., 2004).



Another study completed by Ryan et al. (2009) looked at hospital readmissions, since these are expensive and have a significant impact on a patient's quality of life. This study investigated the effectiveness of an evidence-based group discharge education program for patients with heart failure and their families. The results showed that a team of CNSs, a nurse manager, and nursing staff helped reduce hospital readmissions (Ryan, 2009). CNSs have been instrumental in improving quality and safety of care and reducing health care costs. The CNS implements evidence-based system wide changes to reduce infections, reduce hospital-acquired conditions, reduce medical errors and reduce costs in acute care facilities (Murray & Goodyear-Bruch, 2007; Vollman, 2006). CNSs continue to provide value-based services to organizations.

CNSs increase the availability of effective care for those with chronic illness. They are effective coaches, transitional coaches, etc. in promoting self-care and reducing the overall costs related to chronic illnesses. There are several studies that document this care to the chronically ill population, which includes asthma, heart failure, chronic pulmonary disease, and epilepsy (DeJong & Veltman, 2004; Naylor et al., 2004; Ryan, 2009; Vollman, 2006). CNSs improve access to wellness and preventative care to populations at risk for chronic diseases, such as diabetes and heart failure. There are wellness companies that are managed and owned by CNSs. These companies provide ongoing care to keep employees healthy. By engaging CNS managed wellness companies to their employees, employers can expect decreased health care costs.

All of these studies have shown that CNSs are effective at what they currently do. But the inability to prescribe, order laboratory tests and other non-pharmacological treatments are obstacles in trying to meet the demands of the needs of Arizona residents.

All of these studies have shown that CNSs are effective at what they are currently allowed to do. But the inability to prescribe and order tests is an obstacle. Care can be improved by enhancing the scope of practice and granting prescriptive authority to the CNS as noted in the actual examples provided in Section I.

CNSs can meet the demands of the health care system in the following ways (National Association of Clinical Nurse Specialists, 2009):

- Increase the effectiveness of transitioning care from hospital to home and prevent readmissions
- Improve the quality and safety of care and reduce health care costs
- Educate, train and increase the nursing workforce needed for an improved health system
- Increase access to community-based care
- Increase the availability of effective care for those with chronic illness
- Improve access to wellness and preventive care

## 4.2 Access to Care Issues

In the previous Section II on the definition of the problem, the growing need for healthcare providers was described. This problem, in part, can be relieved by enhancing the scope of practice to the CNS and granting prescriptive authority to the CNS. Examples include:

The CNS is instrumental in achieving high quality care in various patient care settings. CNSs employed in acute care hospitals have helped those organizations achieve Magnet status through the American Nurses Credentialing Center (ANCC), which recognizes exceptional nursing care with resulting improved patient outcomes. In addition, CNSs often lead continuous quality improvement programs because of their advanced knowledge of systems theory, design and evaluation of evidence-based programs, and multidisciplinary teamwork which provides the expertise needed to achieve high quality outcomes (National Association of Clinical Nurse Specialists, 2013).

Benefits of an expanded scope of the CNS to patients include:

- Expanding consumer choice and access to care
- Improving continuity of care
- Increasing cost-effectiveness (e.g. decreased re-hospitalizations, decreased duplication of services)
- Improving interprofessional collaboration and team care
- Increasing long-term survivorship in multisystem, chronic disease, and complex cancer patients
- Decreasing patient stressors, especially for older patients
- Using available healthcare workforce most efficiently to coordinate and deliver care (Brassard & Smolenski, 2011)

The future for the CNSs, allowed to practice fully to the extent of their preparation and training, will have advantages for Arizona. In their role as an advanced specialist, the CNS will be able to initiate and carry out the plan of care necessary for the population they treat, rather than making recommendations to a prescribing provider. Having prescriptive authority for the CNS will eliminate a delay in patient care, and facilitate full implementation of the care plan, in wellness, and acute and chronic disease state management. A CNS workforce that functions at the top of their scope improves overall coordination of care for increasingly complex patients, and improves safety of nursing interventions on the individual and institutional level.

Practice is limited in the state of Arizona regarding the ability of CNSs to practice to the fullest extent of their educational and practical training. Currently, in the state of Arizona, CNSs work in tertiary referral centers for such specialties as burn, couplet care with multiple births, neonatal, cancer, neurology, genomics, and organ transplant. The CNS is limited in the ability to triage the care of the patients who are either coming from or returning home to neighboring states or other countries. In order to provide telehealth assessments and interventions to patients residing in other states, the CNS must obtain an Advance Practice Registered Nurse (APRN) license in each state the patient resides. Otherwise, these patients are cared for by general practitioners, and safety can be compromised as a result. Expanding the scope of CNS practice will increase the ability of the state of Arizona and its

nationally recognized expertise to reach out to more patients and increase their access to excellent care and improved outcomes. These are billable services that increase the revenue to the state of Arizona (Emerson, 2015).

## **VI. Cost to State**

The cost effectiveness of the CNS is exhibited in multiple studies (National Association of Clinical Nurse Specialists, 2013). Implementation of the CNS role is associated with improvement in patient outcomes (Newhouse et al., 2011). In the Balanced Budget Act of 1997, Congress authorized the Medicare program to reimburse CNSs when they perform physician type services within their scope of practice, as long as the CNS holds a state license. The reimbursement rate is 85% of the physician rate for office visits and 75% for hospital services. It should be noted that a collaborative practice agreement must be in place for reimbursement to occur (Doyle, Pennington, & Kliethermes, 2010).

Currently there is no reimbursement for CNSs who are employed at hospital-based organizations. There is restricted reimbursement for those CNSs who run wellness, preventative care, community based programs; provide mental health services and primary care in licensed outpatient health care institutions which is 85% of the physician fee schedule. There is no anticipated financial burden to the state or the public. By removing scope of practice barriers for CNSs, there may be substantial financial gain. Several states have done extensive financial analyses and have found that removing barriers to practice increases access to care and reduces costs associated with chronic conditions that have often been left untreated or inadequately treated. Extensive studies have repeatedly demonstrated the role of the CNS in delivering quality metrics and reducing readmissions to hospitals. Texas has researched that the economic benefits of more efficient use of Advanced Practice Registered Nurses will grow. In 2020, it is estimated that the total annual impact (including multiplier effects) for the state of Texas would include almost \$24 billion in total expenditures and \$12 billion (in constant 2011 dollars) in output (real gross product) as well as 122,735 permanent jobs. Aggregate state and local fiscal revenue gains would be \$722.7 million and \$322.3 million per annum, respectively (The Perryman Group, 2012).

By 2030, in Texas the annual economic benefits of reduced health care expenditures realized by more fully utilizing Advanced Practice Registered Nurses could be expected to rise to \$34.8 billion in total expenditures and \$17.5 billion in output (real gross product) as well as 151,462 permanent jobs. State revenue gains for the year would be \$1.053 billion, with local governmental receipts rising by \$424.8 million (The Perryman Group, 2012).

Health and Human Services now comprise the largest expense in Florida's budget. Florida appropriated \$29.9 billion (43.3%) of the \$69.2 billion budget for Medicaid and other similar programs in FY2011-12. As millions of Americans

enter the health system following the healthcare overhaul in Congress, reducing costs while maintaining effectiveness is becoming a paramount priority. Expanding the scope of practice for Advanced Registered Nurse Practitioners (ARNPs) can generate potential cost savings of \$7 million to \$44 million annually for Medicaid, \$744,000 to \$2.2 million for state employee health insurance, and \$339 million across Florida's entire healthcare system (Florida Tax Watch, 2011).

It is important to note that these cost savings estimates only include Nurse Practitioners in primary care. The estimates exclude potential savings derived from additional utilization of Nurse Anesthetists, Nurse Midwives, and Nurse Specialists in their specific fields of care. Current cost savings estimates would increase substantially if all four categories of APRNs were utilized to the maximum capacity of their education and experience. The \$339 million in savings across Florida includes small businesses and individuals who purchase insurance directly through providers (Florida Tax Watch, 2011)

North Carolina demonstrated that the level of overall health care utilization (demand) observed in 2012, will increase by 14.4 percent by the year 2019 due to population growth and demographic change. Had the Affordable Care Act been fully implemented in 2012, this would have increased baseline 2012 utilization by 3.1 percent assuming no Medicaid expansion. Alternatively, if Medicaid were expanded (or its equivalent, such as letting all persons below poverty purchase subsidized coverage through the health exchanges), baseline demand would increase by 5.7 percent. Less restrictive regulation of APRNs would result in a net increase of 1,744 FTE APRNs relative to the 2012 supply. North Carolina examined the extent to which APRNs can reduce the need for physicians either directly (by substituting for doctors to the extent that their training allows) or indirectly (e.g., by reducing the need for hospitalization and the companion physician care that otherwise would have been provided). The combined increases for NPs and CNSs would reduce the projected shortage of primary care physicians (exclusive of OB/GYNs) by at least 92 percent. The expected increase in CNMs would reduce the expected shortage of OB/GYNs by at least 17 percent. However, since NPs and CNSs also can reduce the demand for OB/GYNs, it is feasible for the expanded use of APRNs under less restrictive regulation to entirely eliminate the shortage Economic Benefits of Less Restrictive Regulation of Advanced Practice Registered Nurses in North Carolina Duke University, Center for Health Policy and Inequalities Research of OB/GYNs while still reducing the shortage of non-OB/GYN primary care doctors by 83 percent. Similarly, the expected increase in CRNAs could eliminate at least 85 percent of the expected shortage of anesthesiologists and possibly eliminate that shortage entirely. Less restrictive APRN regulation has the potential to decrease the overall shortage of nonfederal physicians by at least 41 percent and possibly eliminate the shortage altogether (Conover & Richards, 2015).



## References

- AARP. (n.d.). Full practice authority for nurse practitioners: Increasing access and controlling cost - spotlight California., Retrieved 2014, from <http://campaignforaction.org/webinar/full-practice-authority-nurse-practitioners-increasing-access-and-controlling-cost-spotlight>
- Adams, P. (2000). Insight into a mental health prevention intervention. *Nurse Clinicians of North America*, 35(2), 329-338.
- American Association of Colleges of Nursing. (2006a). AACN statement of support for clinical nurse specialists. Retrieved July, 2015, from <http://www.aacn.nche.edu/publications/position/support-for-cns>
- American Association of Colleges of Nursing. (2006b). The essentials of doctoral education for advanced nursing practice. 28. Retrieved from: <http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf>
- American Association of Colleges of Nursing. (2011). The essentials of master's education in nursing. Retrieved 2014, from <http://www.aacn.nche.edu/education-resources/MastersEssentials11.pdf>
- American Association of Colleges of Nursing. (2012). Criteria for evaluation of nurse practitioner programs 2012 (4th ed.).
- American Association of Critical Care Nurses Certification Corporation. (2014). CCNS exam handbook. Retrieved July, 2015, from <http://www.aacn.org/wd/certifications/docs/ccrn-exam-handbook.pdf>
- American Association of Critical-Care Nurses. (2015). ACCNS-AG exam handbook. Retrieved August, 2015, from <http://www.aacn.org/wd/certifications/docs/acns-ag-exam-handbook.pdf>
- American Association of Critical-Care Nurses. (n.d.). The AACN synergy model for patient care. Retrieved August, 2015, from <http://www.aacn.org/wd/certifications/content/synmodel.pcems?menu=certification>
- American Association of Nurse Anesthetists. (2013). Code of ethics for the certified registered nurse anesthetist. Retrieved July, 2015, from <https://www.aana.com/resources2/professionalpractice/Documents/PPM Code of Ethics.pdf>
- American Association of Nurse Anesthetists. (2014). 2014 member profile survey. from <http://www.aana.com>
- American Association of Nurse Anesthetists. (2015). APRN full practice authority implementation.
- American Association of Nurse Practitioners. (2010). Nurse practitioner MSN tuition analysis: A comparison with medical school tuition. Retrieved 2014, from <http://www.aanp.org/images/documents/research/NPMSNtuitionAnalysis.pdf>
- American Association of Nurse Practitioners. (2013). Nurse practitioner cost-effectiveness. Retrieved 2014, from <http://www.aanp.org/images/documents/publications/costeffectiveness.pdf>
- American Association of Nurse Practitioners. (2014). NP fact sheet. from <http://www.aanp.org/all-about-nps/np-fact-sheet>
- American Association of Nurse Practitioners. (n.d.). All about nps. 2014, from <http://www.aanp.org/all-about-nps>

- American Cancer Society. (2014). Cancer treatment and survivorship facts & figures 2014-2015. Retrieved July, 2015, from <http://www.cancer.org/acs/groups/content/@research/documents/document/acspc-042801.pdf>
- American College of Nurse-Midwives. (2009a). Midwifery Certification in the United States. Retrieved July, 2015, from [http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/00000000077/Midwifery\\_Certification\\_in\\_the\\_United\\_States\\_3\\_31\\_09.pdf](http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/00000000077/Midwifery_Certification_in_the_United_States_3_31_09.pdf)
- American College of nurse-Midwives. (2009b). Midwifery education and the doctor of nursing practice (DNP). Retrieved July, 2015, from [http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/00000000079/Midwifery\\_Ed\\_and\\_DNP\\_7.09.pdf](http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/00000000079/Midwifery_Ed_and_DNP_7.09.pdf)
- American College of nurse-Midwives. (2010). Accreditation commission for midwifery education: A brief history. Retrieved July, 2015, from [http://www.midwife.org/ACNM/files/ccLibraryFiles/Filename/000000001841/A\\_CME.brief.History.10.10.pdf](http://www.midwife.org/ACNM/files/ccLibraryFiles/Filename/000000001841/A_CME.brief.History.10.10.pdf)
- American College of Nurse-Midwives. (2011). The practice doctorate in midwifery. Retrieved August, 2015, from [http://www.midwife.org/ACNM/files/ccLibraryFiles/Filename/000000002731/Practice\\_Doctorate\\_in\\_Midwifery\\_Sept\\_2011.pdf](http://www.midwife.org/ACNM/files/ccLibraryFiles/Filename/000000002731/Practice_Doctorate_in_Midwifery_Sept_2011.pdf)
- American college of nurse-Midwives. (2012a). Core competencies for basic midwifery practice. Retrieved July, 2015, from [http://www.midwife.org/ACNM/files/ccLibraryFiles/Filename/000000002730/Core\\_Compencies\\_June\\_2012.pdf](http://www.midwife.org/ACNM/files/ccLibraryFiles/Filename/000000002730/Core_Compencies_June_2012.pdf)
- American College of Nurse-Midwives. (2012b). Definition of midwifery and scope of practice of certified Nurse-Midwives and certified Midwives. Retrieved July, 2015, from [http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/00000000266/Definition\\_of\\_Midwifery\\_and\\_Scope\\_of\\_Practice\\_of\\_CNMs\\_and\\_CM\\_S\\_Feb\\_2012.pdf](http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/00000000266/Definition_of_Midwifery_and_Scope_of_Practice_of_CNMs_and_CM_S_Feb_2012.pdf)
- American College of Nurse-Midwives. (2014). Competencies for master's level midwifery education. Retrieved August, 2015, from <http://www.midwife.org/ACNM/files/ccLibraryFiles/Filename/000000005140/Competencies-for-Masters-Level-Midwifery-Education-Dec-2014.pdf>
- American College of nurse-Midwives. (2015a). Code of ethics with explanatory statements. Retrieved July, 2015, from <http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/00000000293/Code-of-Ethics-w-Explanatory-Statements-June-2015.pdf>
- American College of Nurse-Midwives. (2015b). Essential facts about midwives. Retrieved July, 2015, from <http://www.midwife.org/Essential-Facts-about-Midwives>
- American college of Nurse-Midwives. (n.d.). Pathways to Midwifery Education Retrieved July, 2015, from <http://www.midwife.org/midwifery-education-programs>
- American Midwifery Certification Board. (n.d.). Retrieved July, 2015, from <http://www.amcbmidwife.org/>

- American Nurses Association. (2010). *Social Policy Statement*. Silver Spring,MD: American Nurses Association.
- American Nurses Credentialing Center. (2013). Certification: General testing and renewal handbook. p. 4-5. Retrieved July, 2015, from <http://www.nursecredentialing.org/GeneralTestingRenewalHandbook>
- American Nurses Credentialing Center. (2015). Adult-Gerontology clinical nurse specialist eligibility criteria. Retrieved August, 2015, from <http://www.nursecredentialing.org/AdultGeroCNS-Eligibility>
- American Nurses Credentialing Center. (n.d.). ANCC certification center. Retrieved July, 2015, from <http://www.nursecredentialing.org/certification.aspx>
- Arizona Board of Nursing. (2009). Advisory opinion Nurse Practitioner description of roles and functions.
- Arizona Board of Nursing. (n.d.). Daily Arizona nursing statistics. <https://www.azbn.gov/>
- Arizona Department of Health Services. (2004). Death certificate processing. 2015, from [https://www.azbn.gov/documents/death\\_certificates/Medical Cause of Death.pdf](https://www.azbn.gov/documents/death_certificates/Medical Cause of Death.pdf)
- Arizona Department of Health Services. (2012). 2014-2018 Arizona healthy aging plan. Retrieved July, 2015, from <http://www.azdhs.gov/phs/healthy-aging/documents/az-healthy-aging-plan-2014-2018.pdf>
- Arizona Health Matters. (n.d.). Healthy People 2020: Progress Tracker. Retrieved July, 2015, from <http://www.arizonahealthmatters.org/index.php?module=Trackers&func=display&tid=1>
- Arizona Secretary of State. (n.d.). Arizona administrative code. Retrieved August, 2015, from <http://www.azsos.gov/rules/arizona-administrative-code>
- Arizona State Board of Nursing. (2012). Advisory opinion: the use of controlled substances for the treatment of chronic pain. Retrieved July, 2015, from [https://www.azbn.gov/Documents/advisory\\_opinion/AO Controlled Substances for theTreatment of Chronic Pain.pdf](https://www.azbn.gov/Documents/advisory_opinion/AO Controlled Substances for theTreatment of Chronic Pain.pdf)
- Arizona State Board of Nursing. (2014a). Arizona State Board of Nursing (AZBN) Initial Application Instructions for Nurse Practitioner/Nurse Midwife Certification; Prescribing and Dispensing Privileges; Clinical Nurse Specialist (CNS). Retrieved July, 2015, from <http://www.azbn.gov/Documents/applications/App Packet Downloads/NP CNS NM PD Packet 10.13.14.pdf>
- Arizona State Board of Nursing. (2014b). Requirements for APRN programs, R4-19-502. Retrieved July, 2015, from <https://www.azbn.gov/Documents/npa/RULES.pdf>
- Arizona State Board of Nursing. (2014c). Requirements for initial APRN certification, R4-19-505. Retrieved July, 2015, from <https://www.azbn.gov/Documents/npa/RULES.pdf>
- Arizona State Board of Nursing. (2014d). Rules of the state board of nursing. Retrieved August, 2015, from <https://www.azbn.gov/Documents/npa/RULES.pdf>
- Arizona State Board of Nursing. (2015). Multi-state licensure. Retrieved July, 2015, from <https://www.azbn.gov>
- Arizona state legislature. (2011). 32-192: Exempted acts; exemption from registration fees; definition. Retrieved August, 2015, from <http://www.azleg.state.az.us/ars/32/01921.htm>



- Arizona State Legislature. (n.d.-a). ARS 32-1634.03: Qualifications for certified registered nurse anesthetist; temporary certificate. Retrieved July, 2015, from <http://www.azleg.gov/FormatDocument.asp?inDoc=/ars/32/01634-03.htm&Title=32&DocType=ARS>
- Arizona State Legislature. (n.d.-b). Qualifications for certified registered nurse anesthetist; temporary certificate. Retrieved July, 2015, from <http://www.azleg.gov/legtext/50leg/2r/bills/sb1362p.pdf>
- Arizona State Legislature. (n.d.-c). A.R.S. 32-1601(6): Definition of clinical nurse specialist. Retrieved July, 2015, from <http://www.azleg.state.az.us/ars/32/01601.htm>
- Arizona State Legislature. (n.d.-d). A.R.S. 32-1606: Powers and duties of board. Retrieved July, 2015, from <http://www.azleg.state.az.us/FormatDocument.asp?inDoc=/ars/32/01606.htm&Title=32&DocType=ARS>
- Arizona State Legislature. (n.d.-e). A.R.S. 32-1634.04: Certified registered nurse anesthetist; scope of practice. Retrieved July, 2015, from <http://www.azleg.gov/FormatDocument.asp?inDoc=/ars/32/01634-04.htm&Title=32&DocType=ARS>
- Arizona state legislature. (n.d.-f). Title 32: Professions and occupations. Retrieved July, 2015, from <http://www.azleg.gov/ArizonaRevisedStatutes.asp?Title=32>
- Arizona State University. (2015). ASU's academic programs: Undergraduate degree: Nursing. 2015-2016 major map, nursing-traditional BSN. Retrieved August, 2015, from <https://webapp4.asu.edu/programs/t5/roadmaps/ASU00/NUNURDBSN/NURTPB/SN/ALL/2015?init=false&nopassive=true>
- Arizona State University College of Nursing and Healthcare Innovation. (2015). BSN program application requirements. Retrieved July, 2015, from <https://nursingandhealth.asu.edu/degree-programs/undergraduate/nursing-bsn>
- AZ.gov. (n.d.). Population projections. Accessed 2014, from <https://population.az.gov/population-projections>
- Bankert, M. (1989). *Watchful care, A history of America's Nurse Anesthetists*. New York, NY: Continuum International Publishing Group.
- Bauer, J. C. (2010). Nurse practitioners as an underutilized resource for health reform: evidence-based demonstrations of cost-effectiveness. *J Am Acad Nurse Pract*, 22(4), 228-231. doi: 10.1111/j.1745-7599.2010.00498.x
- Blue, L. (2001). A specialist nurse intervention reduced hospital readmissions in patients with chronic heart failure. *Evidence-Based Nursing*, 5(2), 55.
- Brassard, A., & Smolenski, M. (2011). Removing barriers to advanced practice registered nurse care: Hospital privilege. *Insight on the Issues* 55. Retrieved July, 2015, from <http://campaignforaction.org/sites/default/files/RemovingBarriers-HospitalPrivileges.pdf>
- Brooten, D., Youngblut, J. M., Brown, L., Finkler, S. A., Neff, D. F., & Madigan, E. (2001). A randomized trial of nurse specialist home care for women with high-risk pregnancies: outcomes and costs. *American Journal of Managed Care*, 7(8), 793-803.

- California Board of Registered Nursing. Nurse anesthetist application. Retrieved July, 2015, from <http://www.rn.ca.gov/applicants/ad-pract.shtml> - cns
- Centers for Disease Control and Prevention. (2003). Public health and aging: Trends in aging--United States and worldwide. February 14, 2003 / 52(06);101-106. Retrieved August, 2015, from <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5206a2.htm>
- Centers for Medicare & Medicaid Services. Local Coverage Determinations (LCDs) for Wisconsin Physicians Service Insurance Corporation. Retrieved July, 2015, from [http://www.cms.gov/medicare-coverage-database/indexes/lcd-list.aspx?Cntrctr=268&ContrVer=1&CntrctrSelected=268\\*1&name=Wisconsin+Physicians+Service+Insurance+Corporation+\(05901%2C+MAC+-+Part+A\)&s=56&DocType=All&bc=AggAAAAAAAAAAAA%3D%3D&-ResultsAnchor](http://www.cms.gov/medicare-coverage-database/indexes/lcd-list.aspx?Cntrctr=268&ContrVer=1&CntrctrSelected=268*1&name=Wisconsin+Physicians+Service+Insurance+Corporation+(05901%2C+MAC+-+Part+A)&s=56&DocType=All&bc=AggAAAAAAAAAAAA%3D%3D&-ResultsAnchor)
- Chitty, K., & Black, B. (2007). *Professional nursing concepts and challenges*. (5th ed.). St. Louis, MO: Saunders Elsevier.
- Conover, C., & Richards, R. (2015). Economic benefits of less restrictive regulation of advanced practice registered nurses in North Carolina: An analysis of local and statewide effects on business activity. Retrieved August, 2015, from <http://chpir.org/wp-content/uploads/2015/02/Report-Final-Version.pdf>
- Council on Accreditation of Nurse Anesthesia Educational Programs; Practice doctorate. (2004, revised May 29, 2015). Standards for accreditation of nurse anesthesia programs. from <http://home.coa.us.com/accreditation/Documents/Standards for Accreditation of Nurse Anesthesia Programs - Practice Doctorate, rev May 2015.pdf>
- Creason, H. (2001). Congestive heart failure telemanagement clinic. *Lippincotts Case Management*, 6(4), 146-156.
- Davenport, D. (2011). Performance audit and sunset review: Arizona state board of nursing. 2014, from [http://www.azauditor.gov/Reports/State\\_Agencies/Agencies/Nursing\\_Board\\_of/Performance/11-02/11-02\\_Report.pdf](http://www.azauditor.gov/Reports/State_Agencies/Agencies/Nursing_Board_of/Performance/11-02/11-02_Report.pdf)
- DeJong, S. R., & Veltman, R. H. (2004). The effectiveness of a CNS-led community-based COPD screening and intervention program. *Clinical Nurse Specialist*, 18(2), 72-79.
- Delametter, G. L. (1999). Advanced practice nursing and the role of the pediatric critical care nurse practitioner. *Critical Care Nursing Quarterly*, 21(4), 16-21.
- Dewitt, K. (1900). Specialties in nursing. *American Journal of Nursing*, 1, 14-17.
- Dierick-van Daele, A. T., Metsemakers, J. F., Derckx, E. W., Spreuwenberg, C., & Vrijhoef, H. J. (2009). Nurse practitioners substituting for general practitioners: randomized controlled trial. *J Adv Nurs*, 65(2), 391-401. doi: 10.1111/j.1365-2648.2008.04888.x
- District of Columbia Municipal Regulations. Municipal regulations for nurse anesthetists. Retrieved July, 2015, from [http://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/Nursing\\_Certified\\_Registered\\_Nurse\\_Anesthetists.pdf](http://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/Nursing_Certified_Registered_Nurse_Anesthetists.pdf)

- Dobscha, S. K., Gerrity, M. S., & Ward, M. F. (2001). Effectiveness of an intervention to improve primary care provider recognition of depression. *Eff Clin Pract*, 4(4), 163-171.
- Dower, C., Moore, J., & Langelier, M. (2013). It is time to restructure health professions scope-of-practice regulations to remove barriers to care. *Health Aff (Millwood)*, 32(11), 1971-1976. doi: 10.1377/hlthaff.2013.0537
- Doyle, E., Pennington, D., & Kliethermes, J. (2010). Missouri Nurses Association APRN handbook: Handbook for advanced practice nurses in Missouri. 3rd ed. Retrieved July, 2015, from <http://www.missourinurses.org/?126>
- Dulisse, B., & Cromwell, J. (2010). No harm found when nurse anesthetists work without supervision by physicians. *Health Aff (Millwood)*, 29(8), 1469-1475. doi: 10.1377/hlthaff.2008.0966
- Eibner, C., Hussey, P. S., Ridgely, M. S., & McGlynn, E. A. (2009). Controlling health care spending in Massachusetts: An analysis of options. from [http://www.rand.org/content/dam/rand/pubs/technical\\_reports/2009/RAND\\_TR733.sum.pdf](http://www.rand.org/content/dam/rand/pubs/technical_reports/2009/RAND_TR733.sum.pdf)
- Emerson, H. (2015). Increasing the workforce capacity of health centers: Reimbursement and scope of practice: State Policy Report #54. Retrieved August, 2015, from [http://www.nachc.com/client/SPR\\_54\\_Workforce\\_Reimbursement\\_SOP\\_Brief\\_FINAL.pdf](http://www.nachc.com/client/SPR_54_Workforce_Reimbursement_SOP_Brief_FINAL.pdf)
- Epstein, R. H., & Dexter, F. (2012). Influence of supervision ratios by anesthesiologists on first-case starts and critical portions of anesthetics. *Anesthesiology*, 116(3), 683-691. doi: 10.1097/ALN.0b013e318246ec24
- Federal Trade Commission. (2014a). Policy perspectives: Competition and the regulation of advanced practice nurses. Retrieved July, 2015, from <http://www.nacns.org/docs/FTC140307aprnpolicy.pdf>
- Federal Trade Commission. (2014b). Policy perspectives: Competition and the regulation of advanced practice nurses. from <http://www.nacns.org/docs/FTC140307aprnpolicy.pdf>
- Federal Trade Commission. (2014c). Prepared statement of the Federal Trade Commission on competition and the potential costs and benefits of professional licensure before the committee on small business, United States House of Representatives. from [http://www.ftc.gov/system/files/documents/public\\_statements/568171/140716professionallicensurehouse.pdf](http://www.ftc.gov/system/files/documents/public_statements/568171/140716professionallicensurehouse.pdf)
- Florida Tax Watch. (2011). Briefings. Retrieved August, 2015, from <http://www.floridataxwatch.org>
- Frontier Nursing University. (n.d.). Nurse-midwifery curriculum. Retrieved August, 2015, from <http://www.frontier.edu/nurse-midwife/curriculum>
- Fuhrman, S. (2011). Optimizing stroke patient care across a hospital system. *Clinical Nurse Specialist: The Journal for Advanced Nursing Practice*, 25(2), 75-95.
- Fusillo, D. A. (2011). Expanding the scope of practice for advanced registered nurse practitioners and physician assistants would generate fiscal savings while enhancing high quality medical care. from <http://www.floridataxwatch.org/resources/pdf/20111102ARNP.pdf>

- Future of Nursing: Campaign for Action. (2013). Quality of nursing care talking points. Retrieved July, 2015, from <http://campaignforaction.org>
- Gilman, K. F., Koslov, T.I. (2014). Policy perspectives: Competition and the regulation of advanced practice nurses. from <https://www.ftc.gov/system/files/documents/reports/policy-perspectives-competition-regulation-advanced-practice-nurses/140307aprnpolycypaper.pdf>
- Gordon, J., Lorilla, J., & Lehman, C. (2012). The role of the clinical nurse specialist in the future of health care in the United States. Paper 196. Retrieved July, 2015, from [http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1195&context=usarmy\\_research](http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1195&context=usarmy_research)
- Grand Canyon University. (2010). Program of study: Master of science in nursing: Adult clinical nurse specialist. Retrieved August, 2015, from [http://www.gcu.edu/Documents/upload/College\\_of\\_Nursing/MSNAdultClinicalNurseSpecialistPOS.pdf](http://www.gcu.edu/Documents/upload/College_of_Nursing/MSNAdultClinicalNurseSpecialistPOS.pdf)
- Gravely, E. A., & Littlefield, J. H. (1992). Cost effective analysis of three staffing models for the delivery of low risk prenatal care. *American Journal of Public Health*, 82(2), 180-184.
- Guzik, A., Menzel, N. N., Fitzpatrick, J., & McNulty, R. (2009). Patient satisfaction with nurse practitioner and physician services in the occupational health setting. *AAOHN J*, 57(5), 191-197.
- Hamric, A., Spross, J., & Hanson, C. (2009). *Advanced practice nursing: An integrative approach* (4th ed.). St. Louis, MO: Saunders Elsevier.
- Hanrahan, N. P., Delaney, K., & Merwin, E. (2010). Health care reform and the federal transformation initiatives: capitalizing on the potential of advanced practice psychiatric nurses. *Policy, Politics, & Nursing Practice*, 11(3), 235-244. doi: 10.1177/1527154410390381
- Haycraft, K., & Voss, S. (2014). The status of advanced practice registered nurses in Missouri: A white paper. 2nd ed. Retrieved July, 2015, from <http://c.ymcdn.com/sites/www.missourinurses.org/resource/resmgr/imported/White Paper - Status of APRNs in MO 2014 2nd Ed.pdf>
- Hogan, A., Furst Seifert, R., Moore, C., & Simonson, B.E. (2010). Cost effective analysis of anesthesia providers. *Nursing Economics*, 28(159-169).
- Holder, K. (2014). *Northern Arizona nurse practitioner group salary survey 2014*. Flagstaff, AZ.
- Horner, S. D. (2008). Childhood asthma in a rural environment: implications for clinical nurse specialist practice. *Clinical Nurse Specialist*, 22(4), 192-198; quiz 199-200. doi: 10.1097/01.NUR.0000311708.40190.ca
- Institute of Medicine. (2000). Crossing the quality chasm: A new health system for the 21st century. Retrieved July, 2015, from [https://iom.nationalacademies.org/~media/Files/Report\\_Files/2001/Crossing-the-Quality-Chasm/Quality\\_Chasm\\_2001\\_report\\_brief.pdf](https://iom.nationalacademies.org/~media/Files/Report_Files/2001/Crossing-the-Quality-Chasm/Quality_Chasm_2001_report_brief.pdf)
- Institute of Medicine. (2010a). The future of nursing: Leading change, advancing health. Retrieved July, 2015, from <http://www.iom.edu/Reports/2010/The-future-of-nursing-leading-change-advancing-health.aspx>

- Institute of Medicine. (2010b). Health care reform and increased patient needs require transformation of nursing profession. Retrieved July, 2015, from <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12956>
- Jessee, B. T., & Rutledge, C. M. (2012). Effectiveness of nurse practitioner coordinated team group visits for type 2 diabetes in medically underserved Appalachia. *J Am Acad Nurse Pract*, 24(12), 735-743. doi: 10.1111/j.1745-7599.2012.00764.x
- Knox, D., & Mischke, L. (1999). Implementing a congestive heart failure disease management program to decrease length of stay and cost. *Journal of Cardiovascular Nursing*, 14(1), 55-74.
- Laurant, M. G., Hermens, R. P., Braspenning, J. C., Akkermans, R. P., Sibbald, B., & Grol, R. P. (2008a,b). An overview of patients' preference for, and satisfaction with, care provided by general practitioners and nurse practitioners. *J Clin Nurs*, 17(20), 2690-2698. doi: 10.1111/j.1365-2702.2008.02288.x
- Lenz, E. R., Munding, M. O., Kane, R. L., Hopkins, S. C., & Lin, S. X. (2004). Primary care outcomes in patients treated by nurse practitioners or physicians: two-year follow-up. *Med Care Res Rev*, 61(3), 332-351. doi: 10.1177/1077558704266821
- Martin, K. E. (2000). Nurse practitioners: a comparison of rural-urban practice patterns and willingness to serve in underserved areas. *J Am Acad Nurse Pract*, 12(12), 491-496.
- McNel, A. M., Buelow, J., Myers, J., & Johnson, E. A. (2007). Concerns and needs of children with epilepsy and their parents. *Clinical Nurse Specialist* 21(4), 195-202. doi: 10.1097/01.NUR.0000280488.33884.1d
- McWilliam-Ross, K. (2011). A clinical nurse specialist led journey to the Joint Commission disease-specific certification in hip fractures. *Orthopaedic Nursing*, 30(2), 89-95; 96-87. doi: 10.1097/NOR.0b013e31820f5110
- Medical Group Management Association. (2014). MGMA cost survey for anesthesia and pain management practices: 2014 report based on 2013 data. Retrieved July, 2015, from <http://www.mgma.com/Libraries/Assets/Industry Data/Survey Reports/Key-Findings-Cost-Anesthesia-FINAL.pdf?source=>
- Midwestern University College of Health Science. (2014). Master of science in nurse anesthesia curriculum 2014-2016. from [https://www.midwestern.edu/Documents/Registrar/Curriculums/NA\\_15\\_Class\\_of\\_2016\(0\).pdf](https://www.midwestern.edu/Documents/Registrar/Curriculums/NA_15_Class_of_2016(0).pdf)
- Munding, M. O., Kane, R. L., Lenz, E. R., Totten, A. M., Tsai, W. Y., Cleary, P. D., . . . Shelanski, M. L. (2000). Primary care outcomes in patients treated by nurse practitioners or physicians: a randomized trial. *JAMA*, 283(1), 59-68.
- Murray, T., & Goodyear-Bruch, C. (2007). Ventilator-associated pneumonia improvement program. *AACN Advanced Critical Care*, 18(2), 190-199. doi: 10.1097/01.AACN.0000269263.44912.5c
- National Academy of Sciences. (2010). Future of nursing: Leading change, advancing health. from [http://www.nap.edu/catalog.php?record\\_id=12956](http://www.nap.edu/catalog.php?record_id=12956)
- National Association of Clinical Nurse Specialists. (2009). Clinical nurse specialist meeting the new demands of a reformed health care system. Retrieved July, 2015, from <http://www.nacns.org/members/docs/CNSTalkingPointsShort.pdf>

- National Association of Clinical Nurse Specialists. (2013). Impact of the clinical nurse specialist role on the costs and quality of healthcare. Retrieved July, 2015, from <http://www.nacns.org/docs/CNSOutcomes131204.pdf>
- National Association of Clinical Nurse Specialists. (2015a). Clinical nurse specialist meeting the new demands of a reformed healthcare system. Retrieved July, 2015, from <http://www.nacns.org/members/docs/CNSTalkingPointsLong.pdf>
- National Association of Clinical Nurse Specialists. (2015b). First national census of clinical nurse specialists provides insights into education levels, employment, practice specialties, and more. Retrieved July, 2015, from <http://www.nacns.org/html/cns-census.php>
- National Association of Clinical Nurse Specialists (NACNS). (2004). Statement on clinical nurse specialist practice and education. 2nd ed. Retrieved July, 2015, from <http://www.nacns.org/docs/NACNS-Statement.pdf>

NACNS. (2016, May). *CNS Scope of Practice and Prescriptive Authority*. Retrieved from NACNS: <https://nacns.org/advocacy-policy/policies-affecting-cnss/scope-of-practice/>

- National Association of Clinical Nurse Specialists (NACNS). (n.d.). Advanced practice registered nurses: The clinical nurse specialists (CNS). Retrieved 2015, from <http://www.nacns.org/docs/APRN-Factsheet.pdf>
- National Board of Certification & Recertification for Nurse Anesthetists. (2015). Overview of the Continued Professional Certification (CPC) Program. Retrieved July, 2015, from [http://nbcrna.com/cpc/Pages/CPC Program Overview.aspx](http://nbcrna.com/cpc/Pages/CPC%20Program%20Overview.aspx)
- National Center for Health Statistics. (2015). Health, United States, 2014: With special feature on adults aged 55–64. Retrieved August, 2015, from [http://www.cdc.gov/nchs/data/14.pdf - glance](http://www.cdc.gov/nchs/data/hus/14.pdf)
- National CNS Competency Task Force. (2010). Clinical nurse specialist core competencies: Executive summary 2006-2008. Retrieved July, 2015, from <http://www.nacns.org/docs/CNSCoreCompetenciesBroch.pdf>
- National Council of State Boards of Nursing. (1997, editorial update April 2014). The National Council of State Boards of Nursing (NCSBN) position paper on telehealth nursing practice. Retrieved July, 2015, from [https://www.ncsbn.org/14\\_Telehealth.pdf](https://www.ncsbn.org/14_Telehealth.pdf)
- National Council of State Boards of Nursing. (2014). Advanced practice member board profiles 2014. Retrieved July, 2015, from [https://www.ncsbn.org/Advanced\\_Practice\\_MBP\\_2014.pdf](https://www.ncsbn.org/Advanced_Practice_MBP_2014.pdf)
- National Council of State Boards of Nursing APRN Advisory Committee. (2008). Consensus model for APRN regulation: Licensure, accreditation, certification & education. Retrieved 2014, from [https://www.ncsbn.org/Consensus\\_Model\\_for\\_APRN\\_Regulation\\_July\\_2008.pdf](https://www.ncsbn.org/Consensus_Model_for_APRN_Regulation_July_2008.pdf)
- National Organization of Nurse Practitioner Faculties. (2012). Nurse practitioner core competencies. Retrieved 2014, from <http://www.nonpf.org/?page=14>
- National Organization of Nurse Practitioner Faculties. (2013). Population-focused nurse practitioner competencies. Retrieved 2014, from <http://www.nonpf.org/?page=14>

- Naylor, M. D., Brooten, D. A., Campbell, R. L., Maislin, G., McCauley, K. M., & Schwartz, J. S. (2004). Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *Journal of the American Geriatric Society*, 52(5), 675-684. doi: 10.1111/j.1532-5415.2004.52202.x
- Ndosi, M., Vinall, K., Hale, C., Bird, H., & Hill, J. (2011). The effectiveness of nurse-led care in people with rheumatoid arthritis: a systematic review. *Journal of Nursing Studies*, 48(5), 642-654. doi: 10.1016/j.ijnurstu.2011.02.007
- Newhouse, R. P., Stanik-Hutt, J., White, K. M., Johantgen, M., Bass, E. B., Zangaro, G., . . . Weiner, J. P. (2011). Advanced practice nurse outcomes 1990-2008: a systematic review. *Nursing Economics*, 29(5), 230-250; quiz 251.
- Reiter, F. (1966). The nurse-clinician. *The American Journal of Nursing* 66(2), 274-280.
- Renfrew, M. J., McFadden, A., Bastos, M. H., Campbell, J., Amos-Channon, A., Cheung, N. F., . . . Declercq, E. (2014). Midwifery and quality care: Findings from a new evidence-informed framework for maternal and newborn care. Retrieved August, 2015, from [http://jesuissagefemme.fr/annexes/19 THE LANCET.pdf](http://jesuissagefemme.fr/annexes/19_THE_LANCET.pdf)
- Rose, B., All, A., & Gresham, D. (2003). Role preservation of the clinical nurse specialist and nurse practitioner. *The Internet Journal of Advanced Nursing Practice*, 5(2), 10.
- Ross, J. D. (2015). Mental health nurse prescribing: the emerging impact. *Journal of Psychiatric and Mental Health Nursing*, 22(7), 529-542. doi: 10.1111/jpm.12207
- Rush University College of Nursing. (2015). Adult-gerontology clinical nurse specialist (DNP) program information. Retrieved August, 2015, from [http://www.rushu.rush.edu/servlet/Satellite?c=content\\_block&cid=1267461164359&pagename=CollegeOfNursing%2Fcontent\\_block%2FContentBlockDetail](http://www.rushu.rush.edu/servlet/Satellite?c=content_block&cid=1267461164359&pagename=CollegeOfNursing%2Fcontent_block%2FContentBlockDetail)
- Ryan, M. (2009). Improving self-management and reducing readmission in heart failure patients. *Clinical Nurse Specialist*, 23(4), 216-221.
- Schiff, M. (2012). The role of nurse practitioners in meeting increasing demand for primary care. Retrieved July, 2015, from <http://www.nga.org/files/live/sites/NGA/files/pdf/1212NursePractitionersPaper.pdf>
- Schuiling, K. D., Sipe, T. A., & Fullerton, J. (2013). Findings from the analysis of the American College of Nurse-Midwives' membership surveys: 2009 to 2011. *Journal of Midwifery & Women's Health* 58(4), 404-415. doi: 10.1111/jmwh.12064
- Simonson, D. C., Ahern, M. M., & Hendryx, M. S. (2007). Anesthesia staffing and anesthetic complications during cesarean delivery: a retrospective analysis. *Nurs Res*, 56(1), 9-17.
- Starck, P. L. (2005). The cost of doing business in nursing education. *J Prof Nurs*, 21(3), 183-190.
- State of New Mexico Board of Nursing. (2012). Requirements and instructions for initial certified registered nurse anesthetist licensure. Retrieved July, 2015, from [http://nmbon.sks.com/uploads/FileLinks/67319fd61b0b4da28dfa2111728a4d46/CRNA\\_End\\_March2014.pdf](http://nmbon.sks.com/uploads/FileLinks/67319fd61b0b4da28dfa2111728a4d46/CRNA_End_March2014.pdf)
- Tabor, J., & Eng, H. (2012). Arizona Rural Health Workforce Trend Analysis 2007-2010. Retrieved July, 2015, from

[http://crh.arizona.edu/sites/default/files/u25/AZ\\_Workforce\\_Trend\\_Analysis\\_2007-10\\_0.pdf](http://crh.arizona.edu/sites/default/files/u25/AZ_Workforce_Trend_Analysis_2007-10_0.pdf)

- The Perryman Group. (2012). The economic benefits of more fully utilizing advanced practice registered nurses in the provision of health care in Texas: an analysis of local and statewide effects on business activity. Retrieved July, 2015, from [http://c.ymcdn.com/sites/flanp.site-ym.com/resource/resmgr/articles\\_and\\_research/Perryman-APRN-Utilization-E.pdf](http://c.ymcdn.com/sites/flanp.site-ym.com/resource/resmgr/articles_and_research/Perryman-APRN-Utilization-E.pdf)
- Thompson, J. N., Varley, C. K., McClellan, J., Hilt, R., Lee, T., Kwan, A. C., . . . Trupin, E. (2009). Second opinions improve ADHD prescribing in a medicaid-insured community population. *J Am Acad Child Adolesc Psychiatry, 48*(7), 740-748. doi: 10.1097/CHI.0b013e3181a2b2ed
- U.S. Congress Office of Technology Assessment. (1981). The costs and effectiveness of nurse practitioners. (Case study 16). 2014, from [http://govinfo.library.unt.edu/ota/Ota\\_5/DATA/1981/8131.PDF](http://govinfo.library.unt.edu/ota/Ota_5/DATA/1981/8131.PDF)
- U.S. Congress Office of Technology Assessment. (1986). Nurse practitioners, physician assistants, and certified nurse-midwives: A policy analysis. (Health technology case 37). 2014, from <http://ota.fas.org/reports/8615.pdf>
- U.S. Department of Health and Human Services. (2010). Healthy People 2020. ODPHP Publication No. B0132. Retrieved July, 2015, from <http://www.aacp.org/resources/education/cape/Documents/Healthy People 2020.pdf>
- U.S. Department of Health and Human Services. (n.d.). Find shortage areas: MUA/P by state and county. Retrieved 2014, from <http://muafind.hrsa.gov/index.aspx>
- U.S. Department of Labor: Bureau of Labor Statistics. (2014). Occupational employment and wages. Retrieved July, 2015, from <http://data.bls.gov/search/query/results?cx=013738036195919377644%3A6ih0hfrgl50&q=anesthesia+inurl%3Abls.gov%2Foes>
- University of Arizona Health Sciences Center. (2014). The supply of physician assistants, nurse practitioners, and certified nurse midwives in Arizona from <http://azahec.ahsc.arizona.edu/content/supply-physician-assistants-nurse-practitioners-and-certified-nurse-midwives-arizona>
- University of Chicago Medicine. (2012). What we don't talk about when we don't talk about sex. Retrieved July, 2015, from <http://www.uchospitals.edu/news/2012/20120322-sex-screening.html>
- University of Colorado Boulder. (2012). Revolutionary Nurse. from <http://www.colorado.edu/news/features/revolutionary-nurse>
- Vollman, K. M. (2006). Ventilator-associated pneumonia and pressure ulcer prevention as targets for quality improvement in the ICU. *Critical Care Nursing Clinics of North America, 18*(4), 453-467. doi: 10.1016/j.ccell.2006.08.006
- Wells, M., Donnan, P. T., Sharp, L., Ackland, C., Fletcher, J., & Dewar, J. A. (2008). A study to evaluate nurse-led on-treatment review for patients undergoing radiotherapy for head and neck cancer. *Journal of Clinical Nursing, 17*(11), 1428-1439. doi: 10.1111/j.1365-2702.2007.01976.x



Education Crosswalk for Clinical Nurse Specialist and Nurse Practitioner

| <b>Clinical Nurse Specialist</b>  |  | <b>Nurse Practitioner</b>   |
|---|--|---|
| Master's of Science in Nursing within a Clinical Nurse Specialist Track   | <b>Required Degree</b>   | Master's of Science in Nursing within a Nurse Practitioner Track  |
| 500 hours   | <b>Clinical Hours</b>  | 500 hours   |
| Advanced Pathophysiology<br>Advanced Pharmacology<br>Advanced Physical Assessment   | <b>Core Content Graduate-level</b>   | Advanced Pathophysiology<br>Advanced Pharmacology<br>Advanced Physical Assessment   |
| Theoretical Foundations<br>Advanced Principles of Evidenced Based Practice<br>Age/Population Based Nursing Theory and Sphere's of Influence for the CNS<br>Health Policy / Advocacy<br>Advanced Roles Transition<br>Healthcare Systems: Technology, Quality and Economics<br>Nursing Leadership   | <b>APRN Specific Educational Content Minimum 30 hours Generalist Content</b> | Theoretical Foundations<br>Advanced Principles of Evidenced Based Practice<br>Age/Population Based Nursing Theory and Practice<br>ie Family Nursing Theory<br>Health Policy / Advocacy<br>Advanced Roles Transition<br>Healthcare Systems: Technology, Quality and Economics<br>Nursing Leadership  |
| CNS Advance Care Population/Age Specific I<br>CNS Practicum<br>CNS Advance Care Population/Age Specific II<br>CNS Practicum<br>CNS Advance Care Population/Age Specific III<br>CNS Practicum  | <b>Role Specific Education Min 18 hours</b>                                  | Nurse Practitioner Health Care I<br>Nurse Practitioner Health Care I Practicum<br>Nurse Practitioner Health Care II<br>Nurse Practitioner Health Care I Practicum<br>Nurse Practitioner Health Care III<br>Nurse Practitioner Health Care III Practicum   |
| <p><b>American Nurses Credentialing Center (ANCC)</b><br/>Adult-Gerontology Clinical Nurse Specialist<br/>Psychiatric Mental Health Clinical Nurse Specialist<br/><i>Public/Community Health Clinical Nurse Specialist (retired 2010)</i><br/><i>Home Health Clinical Nurse Specialist (retired 2010)</i></p> <p><b>Oncology Nurse Credentialing Center</b><br/><i>Advanced Oncology Clinical Nurse Specialist (retired 2018)</i></p> <p><b>American Association of Critical-Care Nurses</b><br/>Adult Gerontology Clinical Nurse Specialist<br/>Pediatric Clinical Nurse Specialist<br/>Neonatal Clinical Nurse Specialist<br/>Adult-Gerontology Acute Care Clinical Nurse Specialist<br/>Acute Critical Care Clinical Nurse Specialist<br/>Acute/Critical Care Pediatric Clinical Nurse Specialist<br/><i>Adult Psychiatric-mental Health Clinical Nurse Specialist (retired 2012)</i><br/><i>Adult and Child/Adolescent Psychiatric Clinical Nurse Specialist (retired 2012)</i></p> | <b>Certification Body</b>  | <p><b>American Nurses Credentialing Center (ANCC)</b><br/>Adult-Gerontology Acute care Nurse Practitioner<br/>Adult-Gerontology Primary Care Nurse Practitioner<br/>Family Nurse Practitioner<br/>Pediatric Primary Care Nurse Practitioner<br/>Psychiatric-Mental Health Nurse Practitioner</p> <p><b>Oncology Nurse Credentialing Center</b><br/>Advanced Oncology Nurse Practitioner</p> <p><b>American Association of Critical-Care Nurses</b><br/>Acute Care Nurse Practitioner<br/>Adult-Gerontology Acute Care Nurse Practitioner</p> <p><b>The American Academy of Nurse Practitioners Certification Board (AANPCB)</b><br/>Adult – Gerontology Primary Care Nurse Practitioner<br/>Emergency Nurse Practitioner (new 2016)<br/>Family Nurse Practitioner<br/><i>Adult Nurse Practitioner (retired 2012)</i><br/><i>Gerontology Nurse Practitioner (retired 2012)</i></p> |